

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
20 July 2006 (20.07.2006)

PCT

(10) International Publication Number  
**WO 2006/075806 A1**

## (51) International Patent Classification:

G11B 20/10 (2006.01) G11B 20/12 (2006.01)  
G11B 7/0045 (2006.01)

## (21) International Application Number:

PCT/JP2006/305468

## (22) International Filing Date: 14 March 2006 (14.03.2006)

## (25) Filing Language: English

## (26) Publication Language: English

## (30) Priority Data:

2005-071456 14 March 2005 (14.03.2005) JP

(71) Applicant (for all designated States except US): **RICOH COMPANY, LTD.** [JP/JP]; 3-6, Nakamagome 1-chome, Ohta-ku, Tokyo, 1438555 (JP).

## (72) Inventor; and

(75) Inventor/Applicant (for US only): **MATSUBA, Takanobu** [JP/JP]; 1061-607, Shoubuzawa, Fujisawa-shi, Kanagawa, 2520823 (JP).

(74) Agent: **ITOH, Tadahiko**; 32nd Floor, Yebisu Garden Place Tower, 20-3, Ebisu 4-chome, Shibuya-ku, Tokyo 1506032 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

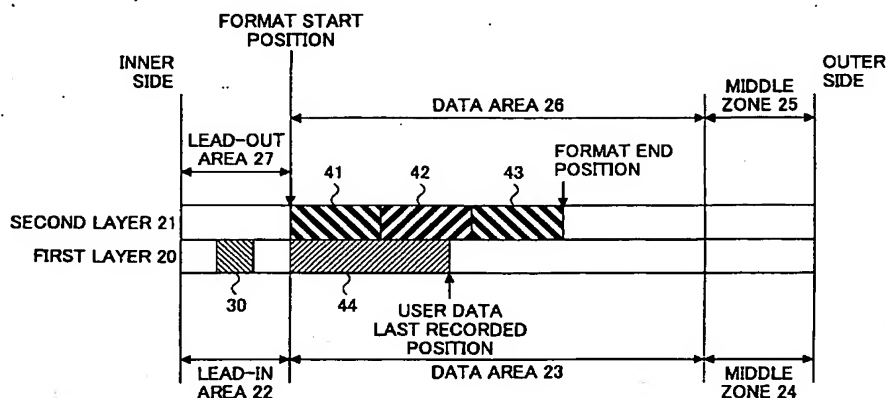
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- upon request of the applicant, before the expiration of the time limit referred to in Article 21(2)(a)

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: INFORMATION RECORDING AND REPRODUCING APPARATUS AND A METHOD OF CONTROLLING AN INFORMATION RECORDING AND REPRODUCING APPARATUS



(57) Abstract: An information recording and reproducing apparatus records data on and reproduces data from each of a plurality of recording layers of a recording medium. A controller (7) controls a formatting process to format the recording medium (1) by performing a first formatting process on the data area of a recording layer. The first formatting process comprises formatting the data area in a series of recording increments that progress from the inner side of the data area to the outer side of the data area. Within each recording increment the formatting is performed along a path extending from the outer side of the data area to the inner side of the data area. A second formatting process on the data area of another recording layer once the first formatting process has been completed, the second formatting process being performed along a path extending from the inner side of the data area of the other recording layer to the outer side of the data area of the other recording layer. Figure 13